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ABSTRACT

Public and private teacher-student interactions were coded for 551 students during 10 mathematics class periods in 18 classrooms, grades 5 through 8. The observation system used was a modified version of two systems, the Brophy and Good teacher-student dyadic interaction system, and the Dweck et al. observation system to code evaluative feedback. Analyses and discussion focused on similarities and differences of teacher-student interactions between the elementary and junior high regular and advanced levels. While there were no differences in the total number of interactions experienced by students at each school level, differences were found in how these observations were distributed across four behavioral categories and in the behavioral patterns associated with the various interactions coded. Evidence suggests that the roles assumed by teachers and students at the elementary level differ from the roles assumed by teachers and students at the junior high school levels. (Author)

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# Differences in Teacher-Student Interactions

# at the Elementary and Junior High School Levels

Early Adolescence: Attitudinal and Environmental Changes

AERA Conference, New Orleans, LA

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ABSTRACT

Public and private teacher-student interactions were coded for five hundred and fifty-one students during ten math class periods in eighteen classrooms, grades 5 through 9. The observation system used was a modified version of two systems, the Brophy and Good teacher-student dyadic interaction system, and the Dweck et al. observation system to code evaluative feedback. Analyses and discussion focused on similarities and differences of teacher-student interactions between the elementary and junior high regular and advanced levels. While there were no differences in the total number of interactions experienced by students at each school level, differences were found in how these observations were distributed across four behavioral categories and in the behavioral patterns associated with the various interactions coded. Evidence suggests that the roles assumed by teachers and students at the elementary level differ from the roles assumed by teachers and students at the junior high levels.

As students make the transition from elementary to junior high school they are faced with a classroom environment which differs from the environment they experienced at the elementary school level (Brophy & Good, 1979). Investigators concerned with the effects of classroom environment on student achievement beliefs have presented evidence which suggests that there is a marked decline in achievement beliefs as students enter the junior high school (Brush, 1980, Harter, 1980, Eccles, Midgley & Adler, in press).

Most attempts at identifying those classroom processes which might be responsible for this decline have focused on the evaluative and instructional practices used at each school level. For example, Brush (1980) suggests that the decline in achievement beliefs is related to the fact that most upper grade level classrooms use a public recitation format which is highly evaluative and competitive. Along this line of inquiry, Hill and Wigfield (in press) have presented evidence which suggests that less evaluative grading procedures can improve the performance of some students. That is, investigators concerned with the reasons why students become more negative and pessimistic at the junior high level typically assume that the junior high classroom environment places demands on students which differ from the demands students face at the elementary school level.

In this paper I will examine the teacher-student interactions and the types of evaluative feedback which occur at the elementary and the junior high regular and advanced levels. The reason for suspecting that systematic differences might be found across school levels is, in part, related to my experiences as a classroom teacher (ten years, primarily at the elementary school level).

Based on this experience, I feel that the decline in achievement beliefs is in many ways contrary to the expectations educators have for students at this stage in their development. Junior high students are viewed as being

more independent and responsible than elementary level students: thus, the junior high curriculum has traditionally differed from the elementary school curriculum. To the extent that this decline in achievement beliefs occurs at this transition, then present attempts at meeting the needs of junior high students may be misguided. Therefcre, I attempted to answer the following questions:

1.) Do elementary school teachers provide opportunities for student responses which differ from the opportunities that junior high teachers provide?

2.) Is the pattern of teacher praise and criticism at the elementary school level consistent with the evaluative feedback students receive at the junior high school level?

3.) How does placement of a junior high school student in a "regular" as opposed to an "advanced" math classroom effect the kind of student-teacher interactions and the type of evaluative feedback a student experiences?

## METHOD

Sample: The student sample consisted of five hundred and fifty-one (551) students from eighteen math classrooms in three elementary schools and three junior high schools. There were 3 fifth and 3 sixth grade classrooms at the elementary school level and 4 seventh, 4 eighth, and 4 ninth grade classrooms at the junior high school level. Students at the junior high level were placed in a "regular" or an "advanced" level classroom while students at the

elementary school level were grouped heterogeneously. There were 186 students at the elementary level, 153 students at the junior high regular level and 212 students at the junior high advanced level. At the seventh grade level there were three regular level classrooms and one advanced level classroom. At the eight grade level there were three advanced level classrooms and one regular level classroom. At the ninth grade level there were three advanced level classrooms and one regular level classroom. All schools were from one of two adjoining school districts in southeastern Michigan.

Procedure: Trained observers (ten females) coded interactions between teachers and individual students during 10 math class sessions per class. Coding began after the observer had veen in the classroom for 3-5 sessions familiarizing him/herself with the teacher's general style and with the student's names. Observation was completed in a two month period in the Spring of 1979.

Observation System: The observation system used was a modified version of two systems, the Brophy and Good teacher-student dyadic interaction system, and the Dweck et al. observation system to code evaluative feedback. The system focused on dyadic interactions, or occasions in which the teacher interacted with a single student. Interactions in which the teacher addressed comments to a group of students or to the class were not recorded. The coded observations fell into one of the following behavioral categories:

1.) Response Opportunities: Interactions in which the student publicly attempts to answer a question posed by the teacher.

2.) Student Initiated Questions: Interactions in which the child publicly asks the teacher a question which relates to classroom work.

3.) Dyadic Contacts: Private interactions, initiated by either the student or the teacher where the focus of is on seatwork or homework.

4.) Teacher Initiated Evaluative Comments: Teacher afforded praise or criticism which is directed at the student's conduct or at the quality or the form of the student's work (not occuring as part of the previous three behavioral categories).

Recording of the first three types of interactions included: 1) who initiated the interaction, 2) the type of interaction initiated, 3) the type of response the student gave the teacher, and 4) the type of feedback received by the teacher. Table 1 presents a more detailed outline of the coding categories as well as definitions of the various types of coded behaviors.

Results: Comparison of results between schools will focus on differences between elementary students and junior high regular level students and on the differences between elementary students and junior high advanced level students. Except for comparisons involving the total number of interactions, comparisons will be based on proportions ( % of total observations or % of total observations within a behavioral category). Since proportions can only be formed if students have a score on the denominator frequency, the N for some analyses are less than the actual number of students. (Whenever the N in a particular analysis differs from the total number of students it will be reported in the appropriate table.)

The first analyses examined whether students at each level, elementary, junior high regular and junior high advanced, differed on the following measures: (1) the total number of interactions per 10 class period, and (2) the distribution of interactions across the four behavioral categories (i.e., response opportunities, dyadics, student initiated questions, and teacher initiated evaluative comments).

Students at each level did not differ in the average number of interactions coded per 10 class period. Elementary students averaged 13.15 interactions, junior high regular students averaged 13.70 interactions and junior high advanced students averaged 12.16 interactions. Table 2 presents a summary of total observations by school level.

While differences in the average number of interactions were not found between school levels (i.e., elementary v. junior high regular, elementary v. junior high advanced ), students did differ according to how these total interactions were distributed across the four behavioral categories. Table 3 presents the proportion of total interactions by behavioral category.

Response opportunities accounted for 44% of all interactions at the elementary school level, 28% of all interactions at the junior high regular level and 32% of all interactions at the junior high advanced level. Differences between levels, both favoring the elementary school level were significant (F=3.435, p=.ooo: F=20.70, p=.000 respectively ). Elementary students also received the greatest percentage of teacher initiated evaluative comments. These behaviors accounted for 14% of all interactions at the elementary level, 10% of all interactions at the junior high regular level, and 11% of all interactions at the junior high advanced level (F=6.923, p=.008; F=6.083, p=.014, respectively). Dyadics accounted for 37% of all interactions at the elementary level, 56% of all interactions at the junior high regular level and 44% of all interactions at the junior high advanced

level. Junior high students at both the regular and advanced levels received a greater number of these interactions than elementary level students received (F=45.09, p=.000; F=8.57, p=.004, respectively). The proportion of interactions which were student initiated questions was 5% at the elementary level, 6% at the junior high regular level and 13% at the junior high advanced level. Only the comparison between students at the elementary and junior high advanced levels was significant (F=36.401, p=.000). In sum, compared to junior high regular and junior high advanced level students, elementary students received a greater number of response opportunities, a greater number teacher initiated evaluative comments, and fewer dyadic interactions. Additionally, junior high advanced level students received a greater number of student initiated questions than elementary level students received.

The next series of analyses examined differences within each behavioral category (i.e., "Whether or not the types of behaviors which occurred within a particular interaction were similar?). Response opportunity findings will be presented first, followed by the analyses which focused on dyadics, student-initiated questions and evaluative comments.

Within the response opportunity category, direct, open and call out questions accounted for at least 90% of all the questions teachers asked. (The remaining 10% included discipline, sustaining, contract and ask other questions) (See Table 1 for definitions of the question types.) Compared to elementary students, junior high regular students received a smaller percentage of open questions (F=5.66, p=.017), whereas junior high advanced students received a smaller percentage of open questions (F=40.45, p=.000) and a higher percentage of call out and direct questions (F=6.17, p=.013; F=28.9, p=.000 respectively) (See Table 3.) The level of a question, whether it focused on academics or on a student's opinion (self-referent) did not differ. As may be expected, most questions focused on academics, not student opinions (83% v. 17% averaged across all three levels).

Also, the accuracy of a student's response did not differ. Students at all three levels answered an average of 87% of all questions correctly. (See Table 5.)

Given a student's response to a question, nine types of teacher feedback responses were coded. Three of those nine, affirms and brief and long feedback statements, accounted for at least 90% of all teacher feedback responses. (The remaining 10% included negates, questions, delays, praise, criticisms or not feedback statements.) (See Table 1 for definitions of the question types.) Within the response opportunity category, junior high students at both levels received a smaller percentage of affirms ($F=47.74$, $p=.000$; $F=21.25$, $p=.000$ respectively) and a greater percentage of long feedback statements than did elementary students ($F=44.00$, $p=.000$; $F=64.14$, $p=.000$ respectively) Also, in contrast to elementary level students, junior high level advanced students had a smaller percentage of brief feedback responses ($F=6.24$, $p=.01$). (See Table 6.)

In sum, differences were found between school levels (i.e., elementary v. junior high regular, elementary v. junior high advanced ) in the behaviors which are associated with the response opportunity interaction. Compared to response opportunities at the elementary level, junior high response opportunities at the regular level included a smaller percentage of open questions and junior high regular level teacher feedback to student responses included a smaller percentage of affirms and a higher percentage of long feedback statements. At the junior high advanced level, teachers used a smaller percentage of open questions and a greater percentage of direct and call out questions and the teacher feedback contained a higher percentage of both brief and long feedback statements (when compared to the elementary level).

Within the dydadic interaction category, no differences were found between school levels (i.e., elementary v. junior high regular, elementary v. junior high advanced) in relation to who initiated the dyadic. At all levels, students were far more likely to initiate the dyadic than were teachers (82% v. 18%, average for all schools). After the dyadic was initiated, differences in teacher feedback responses were found between elementary teachers and junior high advanced teachers. Junior high advanced teachers had a higher percentage of long feedback statements than elementary teachers had ($F=22.77$, $p=.000$). (See Table 7.)

Within the student initiated question category, questions were coded according to whether they focused on procedural or content specific matters, e.g., "Do we have to pass in our work before we go to recess?" v. "Is this problem correct?" No differences were found between elementary and junior high regular levels in the question's focus (procedural v. content) or in the type of teacher's feedback. The majority of students initiated questions were content specific, not procedural. (See Tables 8 & 9.) Differences were found between the elementary and junior high advanced levels. A greater proportion of student initiated questions at the junior high advanced level were content specific ($F=7.81$, $p=.005$). Also, junior high advanced level teachers were far more likely to respond with longer feedback statements ($F=13.232$, $p=.000$) and they were less likely to respond to a student's question with a brief feedback statement ($F=7.34$, $p=.000$). (See Tables 8 & 9.)

All teacher statements which included evaluative comments, praise or criticism, occurred at the close of an interaction (e.g., response opportunity, dyadics and student initiated questions) or they occurred at the start of an interaction (e.g., teacher initated evaluative comments). Since evaluative comments given as feedback after an interaction were too few to be examined in previous analyses, such comments are included with teacher

initiated evaluative comments in this analysis. Within this evaluative comments category, no differences were found between school levels in the percentage of time which teachers provided praise or in the percentage of time which teachers provided criticism. Differences were found in whether the evaluative comments at each level were directed at a student's conduct or at the student's work (quality v. form). Within the category of praise and criticism which was directed at the quality of a student's work, significant differences, each favoring the elementary level were found (i.e., elementary v. junior high regular, elementary v. junior high advanced ) ($F=4.60$, $p=.03$, $F=4.03$, $p=.04$, respectively for praise: $F=12.79$, $p=.0004$, $F=17.31$, $p=.000$, respectively for criticism). Differences in the percentage of praise which was directed at a student's conduct were found between elementary and junior high advanced levels (X=5%, 20% respectively, $F=8.52$, $p=.004$). The difference between the elementary and junior high regular levels in the percentage of praise directed at the student's conduct was marginally significant ($F=2.88$, $p=.09$). No differences were found between school levels in the percentage of praise which was directed at the form of a student's work. Within the category of criticism which was directed at a student's conduct, significant differences, each favoring the junior high regular and advanced levels over the elementary level, were found ($F=5.32$, $p=.022$; $F=8.10$, $p=.005$ respectively). (See Tables 10 & 11.)

In sum, teachers at all three levels, elementary, junior high regular and junior high advanced were twice as likely to use critical feedback statements as opposed to postive feedback statements. Additionally, when praise was given it was more likely to be directed at the quality of a student's work than it was to be directed at the form of the student's work or at the student's conduct. This pattern was stronger at the elementary level than it was at either of the junior high levels. Compared to elementary teachers,

junior high regular and advanced level teachers afforded a greater percentage of their criticism and their praise at the student's conduct. Compared to junior high regular and advanced level teachers, elementary level teachers afforded a greater percentage of their praise and criticism at the quality of a student's work.

Discussion: Across all three school levels, elementary, junior high regular and junior high advanced, the average number of interactions experienced per class by students remained equal whereas the distribution of these interactions across four behavioral categories (e.g., response opportunities, dyadics, student initiated questions and teacher initiated evaluative comments) and the behavioral patterns associated with each type of interaction changed in a specific manner. (See Table 1 for definitions of the behavioral categories.) Assuming the interactional patterns noted at each level remain constant from year to year, then the students entering junior high regular or advanced levels face demands which differ from the demands placed on them at the elementary school level.

At the elementary level, the most frequently observed interaction was the response opportunity in which a student publicly attempts to answer questions posed by the teacher. At the junior high regular level, the most frequently observed interaction was the dyadic in which a student interacts privately with the teacher on issues concerning seatwork or homework. Therefore, in terms of the frequency of an event, the most apparent adjustment facing students when they make the transition to the junior high regular level is the adjustment from an environment where most interactions are public to an environment where most interactions are private. This adjustment from a pulic to a private style of teacher-student interaction is more complex than it first appears. For example, the public style of interaction noted at the elementary level included primarily teacher initiated behaviors while the

private style of interaction at the junior high regular level included largely student initiated behaviors. Also, the response opportunity, the interaction which occurred most frequently at the elementary level changed at the junior high regular level in a particular manner. Compared to elementary level teachers, junior high regular level teachers began a smaller percentage of their response opportunities with questions that permitted voluntary participation. Additionally, elementary level teachers were more likely to respond to a student's answer with an affirm statement, e.g., "That's right" or "Yes," and junior high regular level teachers were more likely to provide longer feedback statements which focused on the manner in which the student arrived at the answer. Thus, as students make the transition to the junior high regular curriculum, there was an increase in the number of student initiated private v. teacher initiated public interactions, there was an increase in the length and the focus of teacher feedback statements and there was less emphasis placed on the use of questions which permit voluntary participation.

The changes that an student faces as he/she makes the transition from an elementary to the junior high advanced level curriculum differ from those faced by students who enter the junior high regular level. As with the junior high regular level students, students at the advanced level experienced fewer response opportunities and more dyadics than elementary level students experienced. Also, teachers at the junior high advanced level were less likely to begin a response opportunity interaction with questions which permit voluntary participation. Thus, when compared to students at the elementary level, students at both the junior high regular and advanced levels were similar in that they experienced an increase in the private student initiated v. public teacher initiated interactions and less emphasis was placed on the use of questions which permit voluntary participation. However,

in addition to these changes, junior high advanced students were far more likely to ask questions in situations where the teacher publicly interacts with the class. This trend towards displaying initiative in public situations was reflected in another behavior as well. For example, advanced level students differed from students at the other levels in that they were far more likely to call out the answer to a question before a teacher had the opportunity to call on someone else (call out question). Additionally, advanced level students differed from elementary level students in that they asked a greater percentage of content specific in contrast to procedural questions. Also, compared to elementary level teachers, advanced level teachers ended most interactions with long feedback statements. Thus, compared to elementary level students, advanced level students experienced an increase in the number of student initiated private v. teacher initiated public interactions, they experienced a decrease in the percentage of response opportunity questions which permit voluntary participation, they experienced a higher percentage of long feedback statements after all types of interactions and they had a higher incidence of those behaviors which require students to display initiative in public situations (student initiated questions & call out questions).

Differences were also found between elementary and junior high regular and advanced levels in both the frequency and the focus of the evaluative comments. Compared to elementary level teachers, junior high regular and advanced level teachers provided students with less evaluative feedback. Whenever such statments occurred, junior high level teachers directed a greater percentage of their praise and criticism at the student's conduct and a smaller percentage of their praise and criticism at the quality of a student's work (compared to elementary level teachers).

Based on these findings it appears that the roles assumed by teachers at the elementary level differ from the roles assumed by teachers at the junior high regular and advanced levels. These differences in teacher roles across school levels should be examined, however, in relation to the fact that all teachers, regardless of grade level, are placed in a situation where a lesson is presented to a group of students and then the students' performances are monitored. For the most part, based on the results of this study, elementary level teachers appear to be using an instructional format where the teacher interacts frequently with a group of students whereas junior high regular and advanced teachers appear to be using an instructional format where less time is spent on group instruction and more time is spent interacting with students on a more private one-to-one basis. Additionally, compared to elementary level teachers, junior high level teachers were far less likely to permit students to raise their hands when answering questions; teachers at the junior high level were far more likely to call on students before they ask a question. Consequently, the instructional procedures students become accustomed to at the elementary level change markedly as students make the transition to the junior high level. Along with the differences in instructional format, junior high students at both the regular and the advanced levels received fewer evaluative comments and the focus of these statements varied with school level. As a result, there appears to be systematic differences between the experiences students have at the elementary level and the experiences students have at the junior high levels.

Another interesting difference is related to the experiences students have if they are placed into a regular as opposed to an advanced level junior high curriculum. Compared to junior high regular level students, many of the advanced level students' interactions were indicative of those behaviors which are associated with students who are considered to be actively involved in the

learning process, i.e., "taking the initiative to interact with teachers in both public and private situations." This difference cannot be attributed simply to the student's choice; the extent to which students are actively of passively involved in the learning process is jointly determined by teachers and students. Junior high teachers at the advanced level appear to be permitting students to b have in ways that teachers at the junior high regular level do not permit.

In order to more fully understand how teachers at each level differed the classroom coding sheets were reexamined. Based on this informal examination, several general behavioral patterns were observed. These patterns were in relation to the ordering of the various interactions within a typical class period. For example, teachers at the elementary level usually began their classes by working with the whole class (based on a 40-50 minute class period). This instructional format normally takes up the first 1/2 to 2/3's of classtime; the remaining time is used for monitoring the students' performances on a private one-to-one basis. At the junior high regular level, the first 1/4 to 1/3 of the class was used normally for whole class instruction. This was followed by private dyadics which usually lasted until the end of the class. There appeared to be no predictable pattern at the elementary and the junior high regular level regarding when student initiated questions occurred . Thus, the key difference between these two levels, elementary and junior high regular, is in relation to the ratio of time spent in the response opportunity format and the dyadic format. In other words, while teachers at the elementary and junior high regular level both began their classes with whole class instruction, junior high regular teachers remained in this instructional format for a far shorter period of time. On the other hand, junior high advanced level teachers differed from teachers at the elementary and junior high regular levels in a unique way. As with

teachers at the elementary and junior high regular levels, teachers at the junior high advanced level began their classes with the response opportunity format and they ended their classes with the dyadic format, yet they differed from other teachers in that they permitted a far greater number of student initiated questions to occur. These student initiated questions occurred generally at the beginning of the class period. Interestingly enough, at all three levels, once an interaction occurred it was unlikely to occur again within the same class period. In sum, an informal examination of the coding sheets supports the claim that there are systematic differences in the instructional procedures used by teachers at the elementary, junior high regular and junior high advanced levels.

While the actual relationship between the differences found in interactional behaviors and evaluative feedback between the elementary and junior high regular and advanced levels does not assure a causal relationship with declining achievement beliefs it does imply that the junior high requires students to behave in ways which differ from those they experienced at the elementary level. Additionally, the experiences a student would have at the junior high regular level appear to differ from the experiences a student would have at the junior high advanced level. The extent to which certain interactional patterns or evaluative feedback statements are related to a decline in achievement beliefs awaits further analysis.

Attention should also be directed towards an examination of how student participation rates varied at each level. Such a concern is based on the possibility that the decline in achievement beliefs at the elementary-junior high school transition could be as easily related to differences in teacher-student interactional patterns as it could to the fact that many of the students observed did not participate at all. For example, while the junior high advanced level students received more student initiated questions

than the students at the regular level it must be mentioned that only 111 advanced level students and 60 regular level students were coded as asking this type of question. As stated earlier, the extent to which non-participation rates are related to a decline in achievement beliefs awaits further analysis.

Conclusion: While no differences were found in the number of interactions coded for students at each school level, differences were found between elementary and junior high regular levels and between elementary and junior high advanced levels in the frequency of various interactions and in the types of behaviors associated with several interactional categories. The most apparent adjustment facing students as they make the transition from the elementary level to either of the two junior high levels is the adjustment from an environment where most interactions are public and teacher initiated to an environment where most interactions are private and student initiated. There are, however, other adjustments that elementary students face as they make the transition to junior high school. For example, as students make the transition to junior high school they experience a change in the nature of the response opportunity. Teachers at both junior high levels were less likely to ask questions which permit voluntary participation; junior high teachers, especially at the advanced level, were far more likely to identify the respondent before they asked a question. Thus, as students enter the junior high level, they experience fewer opportunities for voluntary participation and they experience an increase in the number of one-to-one teacher-student interactions. Only the advanced level students appear to be responding to the junior high experience with behaviors which demonstrate a higher level of initiative (e.g., publicly asking questions of teachers or publicly calling out the answer to a teacher directed question). Additionally, junior high students at both levels need to adjust to a different pattern of evaluative feedback.

Table 1

Overview of Observation System

I. Response Opportunities: Situation in which teacher publicly questions students in class.
   A. Type of Question:
      1.) Discipline -- teacher calls on student to redirect student's attention.
      2.) Direct -- teacher calls on student who has not volunteered.
      3.) Open -- teacher calls on student who has raised his/her hand.
      4.) Call-Out -- student calls out the answer without permission.
   B. Level of Question:
      1.) Response -- questions that have a wrong or right answer.
      2.) Self-referent -- questions that ask for opinion or prediction.
   C. Type of Student Response:
      1.) Correct or incorrect answer.
      2.) Don't know.
      3.) No response at all.
   D. Teacher's Feedback:
      1.) Praise or criticism directed at the quality of the student's work.
      2.) Praise or criticism directed at the form of the student's work.
      3.) Praise or criticism directed at the student's conduct.
      4.) Affirm (e.g., "Yes, that's right.")
      5.) Negate (e.g., "No, that's not right.")
      6.) No feedback
      7.) Ask another student
      8.) Sustaining feedback -- gives the student another opportunity to respond.

II. Student Initiated Questions -- students asks the teacher a question in a public situation.
   A. Type of Questions
      1.) Content
      2.) Procedure
   B. Teacher' Feedback (Same as with Response Opportunity Category.)

III. Dyadic Interactions -- Situations in which teacher interacts privately with student
   A. Initiation of interaction
      1.) Teacher
      2.) Student
   B. Feedback (Same as with Response Opportunity Category.)

IV. Teacher Initiated Evaluative Comment -- Praise or criticism initiated by the teacher yet not as part of the previously mentioned interactional categories
   A. Feedback (Same as with Response Opportunity Category.)

Table 2

Mean Percentage of Total Observations
by Behavioral Category

| School Level | N | Response Opportunity | Dyadic | Student Initiated Question | Teacher Initiated Evaluative Comment |
|---|---|---|---|---|---|
| Elementary | 186 | 44% | 37% | 5% | 14% |
| Junior High Regular | 153 | 28% | 56% | 6% | 10% |
| Junior High Advanced | 212 | 32% | 44% | 13% | 11% |

(See Table 1 for a explanation of "Behavioral Category.")

Table 3

Mean Percentage of Questions by Type
Within the Response Opportunity Category

| Question Type | School Level: Elementary | Junior High Regular | Junior High Advanced |
|---|---|---|---|
| Open | 50% | 41% | 26% |
| Direct | 34% | 40% | 43% |
| Call Out | 7% | 9% | 22% |
| Other[1] | 9% | 10% | 9% |
| N | 169 | 135 | 163 |

1. Other= Ask Other, Contract, Sustain, Discipline (See Table 1 for definitions of question types.)

Table 4

Mean Percentage of Response Opportunities
by Question Level

| Question Level | School Level: Elementary | Junior High Regular | Junior High Advanced |
|---|---|---|---|
| Academic | 85% | 84% | 81% |
| Self-Referent | 15% | 16% | 19% |
| N | 169 | 135 | 163 |

(See Table 1 for a definition of question level.)

Table 5

Mean Percentage of Questions
Answered Correctly

| Accuracy of Student's Response | School Level: Elementary | Junior High Regular | Junior High Advanced |
|---|---|---|---|
| Correct | 90% | 89% | 89% |
| Wrong | 8% | 7% | 8% |
| Don't Know | 2% | 4% | 3% |
| N | 169 | 135 | 163 |

Table 6

Mean Percentage of Teacher Feedback Statements
Within the Response Opportunity Category

| Teacher Feedback Statements | School Level Elementary | Junior High Regular | Junior High Advanced |
|---|---|---|---|
| Affirm | 33% | 16% | 23% |
| Brief Feedback | 29% | 33% | 24% |
| Long Feedback | 27% | 45% | 47% |
| Other | 11% | 6% | 6% |
| N | 169 | 135 | 163 |

Table 7

Mean Percentage of Dyadics

| Type | School Level: Elementary | Junior High Regular | Junior High Advanced |
|---|---|---|---|
| Student Initiated | 83% | 83% | 81% |
| Teacher Initiated | 17% | 17% | 19% |
| N | 167 | 152 | 196 |

Table 8

Mean Percentage of Student Initiated Questions
Related to Procedural or Content Issues

| Question's Focus | School Level: Elementary | Junior High Regular | Junior High Advanced |
|---|---|---|---|
| Content | 69% | 74% | 85% |
| Procedure | 31% | 26% | 15% |
| N | 72 | 60 | 111 |

Table 9

Mean Percentage of Teacher Feedback Statements
Within the Student Initiated Question Category

| Teacher Feedback | School Level: Elementary | Junior High Regular | Junior High Advanced |
|---|---|---|---|
| Brief Statement | 60% | 57% | 38% |
| Praise or Criticism | 4% | 2% | 1% |
| Delay | 8% | 3% | 1% |
| N | 72 | 60 | 111 |

Table 10

Mean Percentage of
Praise by School Level

| School Level | % of Total Interactions | Focus Work | Focus Form | Focus Conduct |
|---|---|---|---|---|
| Elementary | 6% | 91% | 5% | 4% |
| Junior High Regular | 4% | 78% | 9% | 13% |
| Junior High Advanced | 7% | 78% | 2% | 20% |

Table 11

Mean Percentage of
Criticism by School Level

| School Level | % of Total Interactions | Focus | | |
|---|---|---|---|---|
| | | Work | Form | Conduct |
| Elementary | 15% | 19% | 15% | 66% |
| Junior High Regular | 9% | 9% | 8% | 83% |
| Junior High Advanced | 9% | 7% | 6% | 87% |